

REMARKS

Initially, applicant would like to thank the Examiner for the helpful and courteous telephonic interview she conducted with applicant's undersigned representative on April 9, 2007 in relation to a Draft/Proposed Amendment-B which was forwarded to the Examiner in conjunction with the interview. During the interview the proposed amendments to the claims were discussed in relation to the final rejections. No agreement was reached. However, the Examiner indicated that: the proposed amendments appeared to overcome the rejection under 35 USC 112; and while there are significant differences between slit-like nozzles for discharging coating solution onto a wafer or other planar substrate and a paint spray gun nozzle as disclosed by the Zehner reference being applied by the Examiner in her rejections, the claimed invention is directed primarily to a cleaning apparatus such that the claims could be amended to further define such apparatus, rather than the nozzle, for distinguishing over the applied references.

Upon entry of the present Amendment-B the claims in the application are claims 1-13 and 15-20, of which claims 1, 3 and 15 are independent, and of which claims 3, 6-7, 9 and 12 are withdrawn from consideration as being drawn to a non-elected specie.

Amendments Presented

Independent claims 1 and 3 have been amended to further define the nozzle as having an elongate slit-like discharge opening of a predetermined width in a lower end thereof and adapted to discharge coating liquid on a surface of a substantially planar substrate in the predetermined width, to further define the parallel relationship of the slit-like opening and the brush when the lower end of the nozzle is disposed in engagement with the brush; and to expressly/positively define a device which rotates and moves the brush when the lower end of the nozzle is disposed in engagement with the brush.

Independent claim 15 is amended to delete all positive references to the nozzle in the main body of the claim for the purpose of overcoming the Examiner's 112 rejection, while the preamble of this claim is also amended to further define the nature of the nozzle similar to claim 1, and the main body of this claim is amended to positively define a mechanism which rotates and moves the brush similar to claim 1, and to define characteristics of the cleaning tank, i.e., the cleaning tank includes partition plates extending upwardly from a bottom wall thereof to define a reservoir portion which contains the cleaning liquid within the cleaning tank, a lower portion of the brush is disposed in the cleaning liquid in the reservoir portion, and a drain port formed in said bottom wall laterally outward of said reservoir portion such that cleaning liquid spilling out of the reservoir portion when the brush is rotated and moved is drained from the cleaning tank through the drain port .

Dependent claims 2, 6-9, 12, 13, 16 and 18 are amended to be consistent with the amended independent claims, claims 8 and 18 further define that the brush is moved while being rotated, and new claim 20 depends from claim 1 and defines characteristics of the cleaning tank similar to amended claim 15.

The specification is amended to provide an express antecedent basis for the amendments to the independent claims relating to the predetermined width of coating liquid dispensed from the nozzle onto a substrate surface.

Applicant respectfully submits that all of the above amendments are fully supported by the original disclosure, including the drawings and the discussion of slit-like nozzles in the Background section of the application. Applicant also respectfully submits that the above amendments do not introduce any impermissible "new matter" into the application.

Applicant also respectfully submits that the above amendments overcome the Examiner's

objection to claim 1 and rejection of claims 15-19 under 35 USC 112, second paragraph, presented at pages 2-3 of the Office Action, and it is respectfully requested that the objection and rejection be reconsidered and withdrawn.

Response to Objections and Rejections Presented In Office Action

The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment is submitted. It is contended that by the present amendment, all bases of rejection set forth in the Office Action have been traversed and overcome. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Election/Restrictions

On page 2 of the Office Action, the Examiner notes the presence of claims 3, 6, 7, 9 and 12 which are withdrawn from consideration as being directed to a non-elected invention with traverse.

Claim Rejections – 35 USC 103

At pages 3-9 of the Office Action the Examiner has presented several rejections of claims 1, 2, 4, 5, 8, 10, 11 and 13-19 under 35 USC §103(a) as being unpatentable over Zehner (US Patent App. Pub. 2003/0127046 A1) et al. in view of Eriksson (US 6,321,688), and for some of the claims further in view of one or both of Tsutsumi et al. (US 6,549,457) and Batchelder (US 2,164,443). The rejections are similar to those presented against claims 1, 2, 4, 5, 8, 10 and 11 in the last Office Action dated 2 August 2006, except that the Examiner now includes the Eriksson reference in the rejection of all of the dependent claims, which she failed to do in the prior Office Action.

Additionally, at pages 9-12 of the Office Action the Examiner also present a “Response to Arguments” in which she addresses several of the arguments presented in the Amendment-B. Specifically, the Examiner asserts that:

- 1) all of the applied references are analogous art to the claimed invention, including Zehner which addresses a problem reasonably pertinent to the problem with which the applicant is concerned (both clean dirty nozzles with rotary brushes), Eriksson is analogous since it addresses the issue of cleaning the sides and tip of elongates members), Tsutsumi is analogous since it is concerned with removing residue similar to the claimed invention, and Batchelder is analogous since both the applicant and this reference address the problem of debris on the rotating brush and teach a device to remove the debris;
- 2) The proposed modification of Zehner with Eriksson would not make the device inoperable since one skilled in the art would be able to modify the invention of Zehner so that the solvent would not drain out as shown in the present invention;
- 3) Not all hindsight reasoning is improper relative to a rejection under 35 USC 103.

Applicant's Response

Upon careful consideration and in light of the above amendments, applicant respectfully traverses the Examiner's rejections and submits that the present claims are patentably distinct over the applied references, based on the following.

Initially, applicant maintains that not all of the applied references are properly considered as "analogous art" to the claimed invention, whereas the proposed modifications to Zehner's paint spray gun cleaner based on select teachings of the secondary references and otherwise are improper under 35 USC 103 for substantially the same reasons as set forth in Amendment-B. Most notably:

1) none of these references teach or suggest features of the claimed invention, including a nozzle having an elongate slit-like discharge opening and a cylindrical long-length brush having a length substantially the same as a length of the nozzle; 2) at least some of the references applied in rejecting the claims are non-analogous art to the claimed invention (because they do not pertain to the field of

slit-like nozzles and are not reasonably pertinent to the problems associated with cleaning slit-like nozzles as addressed by the claimed invention) and hence are not properly applied under 35 USC 103 in rejecting the claims; 3) even if some of the references were analogous art to the claimed invention, the Examiner's proposed modifications / combinations of select features of the various references to allegedly achieve the claimed invention are improperly based on suggestions coming entirely from the Examiner (guided by impermissible hindsight of applicant's disclosure), rather than from any teaching or suggestion which may be fairly gleaned from the references themselves.

Relative to item 1), applicant respectfully submits that the Examiner's proposed modification of Zenher's nozzle opening to be slit-like is not supported by Zenher's actual disclosure which depicts a conical nozzle tip as conventionally used for paint spray guns, and is otherwise and unreasonable interpretation of slit-like given the present disclosure and the conventional meaning of slit-like nozzle in the art. For example, paint spray guns do not include slit-like discharge openings in a lower end thereof.

Further, the above amendments to claims 1, 3 and 15 further emphasize this important distinction by defining the nozzle as being having an elongate slit-like discharge opening of a predetermined width in a lower end thereof and adapted to discharge coating liquid on a surface of a substantially planar substrate in the predetermined width. Certainly, paint spray guns such as disclosed by Zehner do not have an elongate discharge opening of a predetermined width in a lower end thereof and do not function to discharge a coating liquid onto a planar surface in the predetermined width. Rather, paint spray guns have tiny discharge openings of circular cross section, and discharge paint under relatively high pressure as a spray with a width many times (hundreds or thousands of times) larger than the width of the nozzle opening. This is an important distinction and reflects problems uniquely associated with slit-like nozzles, as addressed and overcome by the presently claimed invention.

Relative to item 2), applicant respectfully submits that the Tsutsumi and Batchelder references are not “analogous art” to the claimed invention under two part test applied by the courts. Particularly, neither the brush roll cleaning unit for cleaning excess toner and other debris from the drum of an electro-photographic copier/printer disclosed by Tsutsumi nor the textile drafting machine disclosed by Batchelder remotely pertain to a liquid dispensing nozzle; whereas the Tsutsumi and Batchelder references do not reasonably pertain to the problem addressed by the present invention, i.e., difficulties specifically encountered in sufficiently cleaning remnant coating solution from around the elongate discharge openings of slit-like nozzles .

In this regard, relative to the Examiner’s assertion that Tsutsumi and Batchelder are reasonably pertinent to the problem addressed by the invention, applicant respectfully traverses such assertion because the Examiner has *too broadly / unreasonably* posed the “problem” addressed by the invention beyond what is actually set forth in the application. The problem is not simply/generally cleaning residue from a surface using a brush or cleaning accumulated debris from cleaning brushes, but (again) the problem is/are the difficulties specifically encountered in sufficiently cleaning remnant coating solution from around the elongate discharge openings of slit-like nozzles . Tsutsumi and Batchelder do not pertain to such properly posed problems, and persons of ordinary skill in the art would not (in the first instance) have looked to either of these references even if such persons were considering the problems addressed by the present invention.

Relative to item 3), in addition to the arguments presented in Amendment-B, for example, applicant notes that the references *do not provide any motivation* (as required for rejection under 35 USC 103) for the Examiner’s proposed modifications of Zenher’s paint spray nozzle cleaning device relative to select features of the secondary references (Eriksson, Tsutsumi and Batchelder). For example, Eriksson discloses a teat cleaning device in which only one of multiple brushes is movable,

and is particularly constructed/adapted for cleaning animal teats of contaminants such as dirt, and wherein the movement of the brush is necessary because of the *different sizes and lengths of animal teats which are to be cleaned using the device*. Quite differently, Zenher's specifically includes a single stationary brush because it *always cleans the same paint spray nozzle which is always disposed in the same position for cleaning because it is attached to a programmed robotic arm*). Quite simply, the reason for moving Eriksson's teat cleaning brush does not apply to and is incompatible with Zenher's paint spray nozzle cleaning device, such that persons of ordinary skill in the art would not consider the proposed modification to be obvious or desirable. Similar arguments apply to the Examiner's further hindsight modifications of Zenher's paint spray nozzle cleaning device in view of select features of Tsutsumi's brush roll cleaning unit in an electrostatic copier (noting that there is no electrostatic toner debris to be removed from Zenher's paint spray gun) and Batchelder's textile drafting means (noting that Zenher's paint spray gun cleaner is not concerned with removing textile fibers or the like). Clearly, the specific reasons for use of the select features as set forth by Tsutsumi and Batchelder simply do not apply to Zenher's paint spray gun cleaning device.

In this regard, applicant notes the Examiner's assertion that the proposed modification of Zenher's cleaning device relative to a select feature of Eriksson would not render the cleaning unit inoperable because one of ordinary skill in the art *would be able to modify Zenher to prevent solvent from draining out ...*, set forth at the paragraph bridging pages 10-11. Applicant respectfully traverses the Examiner's argument because it ignores the actual (incompatible) teachings of the references. Applicant respectfully submits that the Examiner's assertion is essentially an argument that "it would be obvious to try and modify Zenher's device to include the select feature of Eriksson", whereas the courts have long held that this type of rejection is improper under 35 USC 103 because it is not based on any motivation from the references themselves.

Also in relation to claim 15, applicant respectfully submits that the above amendments relating to characteristics of the cleaning tank are not disclosed or suggested by any reference of record.

CONCLUSION

Based on all of the foregoing, applicant respectfully submits that all of the objections and rejections set forth in the Office Action are overcome, and that as presently amended, all of the pending claims are believed to be allowable over all of the references of record, whether considered singly or in combination. The applicant requests reconsideration and withdrawal of the rejection of record, and allowance of the pending claims.

The present amendment is being concurrently filed with a Request for Continued Examination (RCE) and fee for same is being paid online via EFS-Web.

If the Examiner is not fully convinced of all of the claims now in the application, applicant respectfully requests that the Examiner telephonically contact the applicant's undersigned representative to expeditiously resolve prosecution of the application.

Favorable consideration is respectfully requested.

Respectfully submitted,



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